

AMENDMENTS FO THE DRAWINGS:

The attached sheet of drawings includes changes to Figure 2. This sheet, which includes Figure 2, replaces the original sheet including Figure 2. In Figure 2, a draftsman's error has been corrected to conform the formal drawing of Figure 2 with the informal drawing originally submitted with this application on filing.

Furthermore, Figures 1-7 have been amended to correct the engagement of the lockdown nut and the flange body annular shoulder, to conform with the original drawings submitted with the present application. Figures 1-4 have also been amended regarding the ring gasket.

Attachments: Replacement Sheets
Annotated Marked-Up Drawings

REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

Drawings

The drawings were objected to because surfaces 34a and 34b in Figure 2 of the formal drawing submitted in this application by way of voluntary amendment failed to show the frusto-conical shape shown in Figure 2 of the informal drawings submitted on filing of the application.

The draftsman's error has been corrected. No new matter has been added.

Claim Objections

The Office Action objected to claims 5, 21 and 23 on formal grounds. Claims 5, 21 and 23 are amended to traverse the objections.

Claim Rejections -35 U.S.C. § 102

The Office Action rejected claims 1, 5, 10, 11, 23, 28 and 29 under 35 U.S.C. 102(b) as being anticipated by McLeod. Applicant respectfully disagrees. Regarding claim 1, McLeod fails to teach or suggest a drilling flange. McLeod teaches a wellhead isolation tool. As should be understood by those skilled in the art, the wellhead isolation tool is used to isolate wellhead components of a drilled well from high fluid pressures used to stimulate the well. The wellhead isolation tool includes a lower body 10 having a flanged end 12 for attachment to a similarly flanged end 14 of a wellhead assembly 16. Consequently, McLeod wellhead isolation tool is not adapted for connection to an independent screwed wellhead and can only be mounted to a flanged wellhead 11.

Nor does McLeod teach a bottom end that both is adapted to be mounted to a wellhead and includes an annular shoulder for rotatably supporting a lockdown nut. For example, even if the McLeod flanged end 12 could correspond to the bottom end called for by claim 1, McLeod's hammer nut 40 is not supported by this flange but rather by an associated body 44 of a lower beam assembly 20.

McLeod further fails to teach a metal-to-metal seal for providing a fluid seal between the flanged body and the wellhead. The Examiner asserts that the contact surfaces of the body and the wellhead would inherently form a metal-to-metal seal when forced into a tight engagement with each other by the lockdown nut. It is respectfully submitted that

this is not the case in at least two respects. First, the McLeod associated body 44 contacts threaded neck 38, not the wellhead. Further, the fluid seal is provided by a "packing set 34," as should be understood by one skilled in the art, not the contact between body 44 and neck 38. Consequently, the hammer nut 40 only serves to prevent the mandrels 58, 60 from rising when high pressure fluids are injected into the well. No metal-to-metal seal is provided or intended because the packing set 34 provides a high pressure fluid seal to prevent pressurized fluids from escaping through an annulus between the outer mandrel 60 and well casing 66. It is therefore respectfully submitted that McLeod teaches nothing that would lead a person of ordinary skilled in the art to the invention claimed in claim 1.

Nonetheless, to facilitate prosecution of the present application, claim 1 is cancelled and the subject matter thereof incorporated respectively into amended claims 4 and 5. This amendment provides structural limitations defining the metal-to-metal seal for providing a fluid seal between the flanged body and the wellhead. The rejection of claims 1, 5 and 10 is thereby traversed.

With respect to claim 11, in addition to the arguments set forth above, McLeod fails to teach or suggest an independent screwed wellhead. In fact, McLeod teaches that his wellhead isolation apparatus can only be secured to a flanged wellhead 11. The rejection of claim 11 is thereby traversed.

With respect to claim 23, the arguments set forth above with reference to claims 1 and 11 apply and the rejection of claim 23 is likewise traversed.

With respect to claim 28, claim 28 is amended to correct a typographical error in the last line in which "fluid seal" should have read --independent screwed wellhead--. Amended claim 28 claims an independent screwed wellhead. The arguments set forth above with reference to claim 11 therefore apply and the rejection of claims 28 and 29 is traversed.

Claim Rejections -35 U.S.C. § 103

The Office Action rejected claims 2, 3, 12-16, 18, 22, 24, 27 and 30 under 35 U.S.C. 103(a) as being unpatentable over McLeod in view of Dallas. For reasons set forth above with reference to claim 1, the rejection of claims 2, 3 and 12 is traversed.

With respect to claim 22, the arguments set forth with reference to claims 1 and 11 applies, and the rejection of claim 22 is traversed. Respecting claim 24, the arguments set forth above with respect to claim 23 apply, and the rejection is traversed.

Claim 27 depends from claim 25, which is addressed below. Applicant submits that the rejection over McLeod in view of Dallas is unwarranted, and the rejection of claim 27 is traversed for at least the reasons set forth below with reference to claim 25.

Regarding claim 30, which depends from claim 28, the arguments set forth above with reference to claim 28 apply, and the rejection is traversed.

The Office Action rejected claims 4, 17, 20 and 21 under 35 U.S.C. 103(a) as being unpatentable over McLeod in view of Smith. Claim 4 is amended to include the subject matter of cancelled claim 1.

Smith fails to teach a flange body rotatably supporting a lockdown nut for securing the flange body to the wellhead or a metal-to-metal seal for providing a fluid seal between the flange body and wellhead, the metal-to-metal seal comprising a metal ring gasket.

Ritter teaches a well tubing hanger method and apparatus for use in well control. The well tubing hanger is designed to be inserted in a flanged wellhead. The tubing hanger 20 is mounted to the flanged wellhead, and a fluid seal is provided between the tubing hanger 20 and the flanged wellhead. The fluid seal is provided by a seal ring 45, which is a BX ring gasket that is well known in the art. As should be understood by those skilled in the art, a BX ring gasket can only be used in a flanged connection. As should be further understood, the flanged connection must be assembled using flange bolts inserted in a specific sequence and torqued to a specific torque. Prior to the instant invention, a lockdown nut has never been used to secure a drilling flange to a wellhead, much less an independent screwed wellhead. It is therefore respectfully submitted that Ritter would not provide any motivation to a person skilled in the art to invent a drilling flange for an independent screwed wellhead as called for in claim 20.

The rejection of claim 20 is thereby traversed.

For the same reasons, the rejection of claim 21 is likewise traversed.

The Office Action rejected claims 6-8 as being unpatentable over McLeod in view of Garrett. Claim 6 is amended to depend from amended claim 4. Garrett teaches a

flanged drilling head. For reasons set forth above with reference to claims 1 and 4, the rejection of claims 6-8 is traversed.

The Office Action rejected claim 9 as being unpatentable over McLeod in view of Garrett as applied to claims 1 and 6 above, and further in view of Smith. For reasons set forth above with reference to claims 1, 4 and 6 the rejection of claim 9 is likewise traversed.

The Office Action rejected claim 25 as being unpatentable over Smith in view of Ritter. Claim 25 calls for an independent screwed wellhead comprising a top end for mating engagement with a bottom end of a flange to be mounted thereto, the top end comprising an annular groove for receiving a metal ring gasket that is compressed between the independent screwed wellhead and the flange to provide a high pressure metal-to-metal seal when the flange is mounted thereto. Smith fails to teach or suggest an independent screwed wellhead comprising an annular groove for receiving a metal ring gasket. In accordance with Smith, a drilling flange 20 is mounted to the upper portion of wellhead 19, and a seal 28 forms a seal between the drilling flange 20 and wellhead body 12. The independent screwed wellhead, however, does not include the annular groove as called for by claim 25, nor does Smith teach or suggest a metal-to-metal seal when the flange is mounted to independent screwed wellhead. As noted above, Ritter teaches a flanged wellhead, well known in the art with a BX ring gasket which can only be used with a flanged connection. The combination of Smith and Ritter therefore fails to teach or suggest the limitations claimed in claim 25 and the rejection of claim 25 is traversed.

The Office Action rejected claim 26 as being unpatentable over Smith in view of Ritter and further in view of McLeod. Neither Smith, Ritter nor McLeod teach a drilling flange having bottom end with peripheral annular shoulder for rotatably supporting a lockdown nut. The rejection of claim 26 is thereby traversed.

Allowable Subject Matter

Applicant gratefully acknowledges that claim 19 is allowed.

However, for reasons set forth above in detail, it is respectfully submitted that claims 2-30 that remain pending in this application are now in a condition for immediate allowance. Favourable reconsideration and early issuance of a Notice of Allowance are requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Lloyd G. Farr', is written over a horizontal line.

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1/7

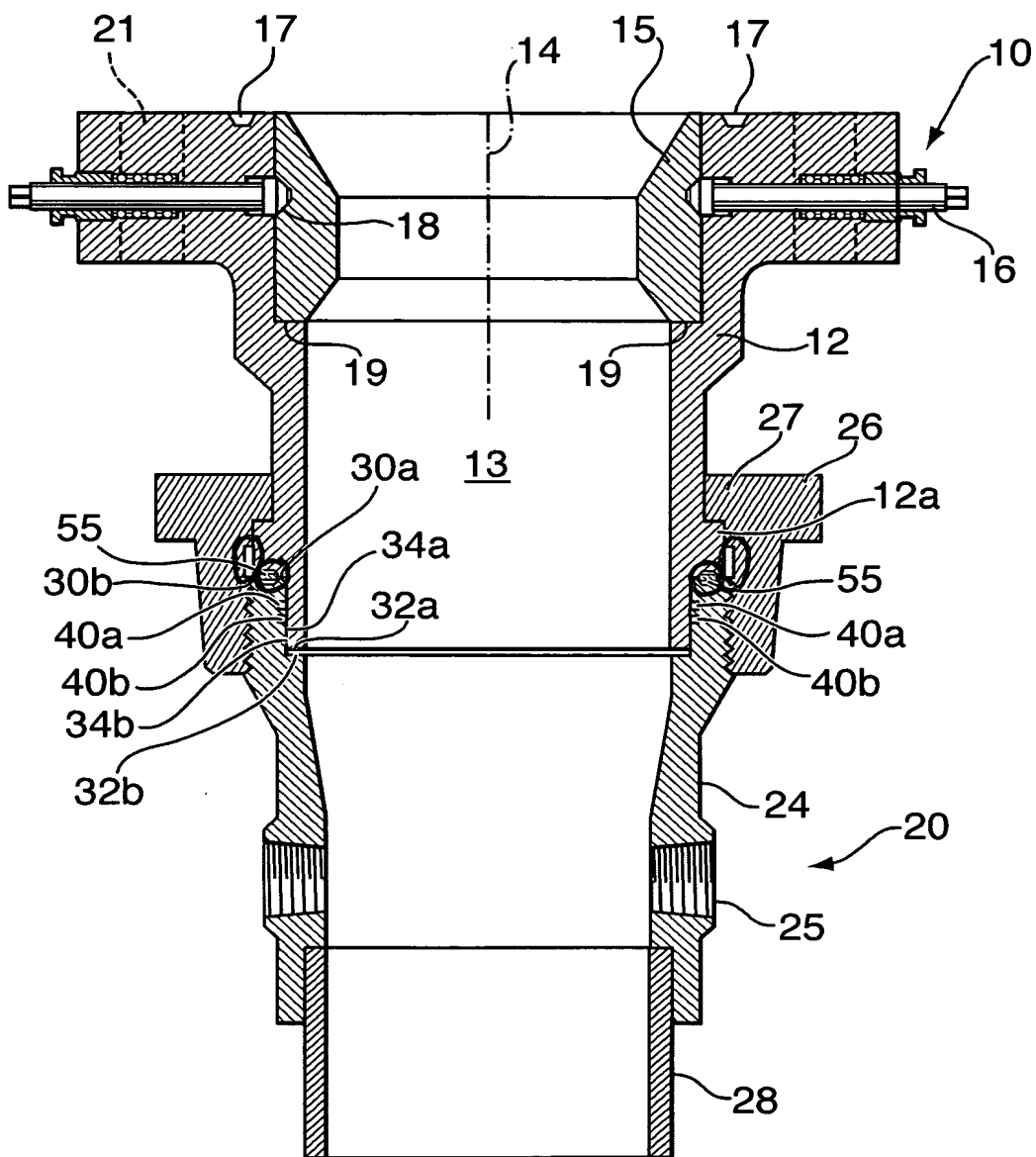


FIG. 1

2/7

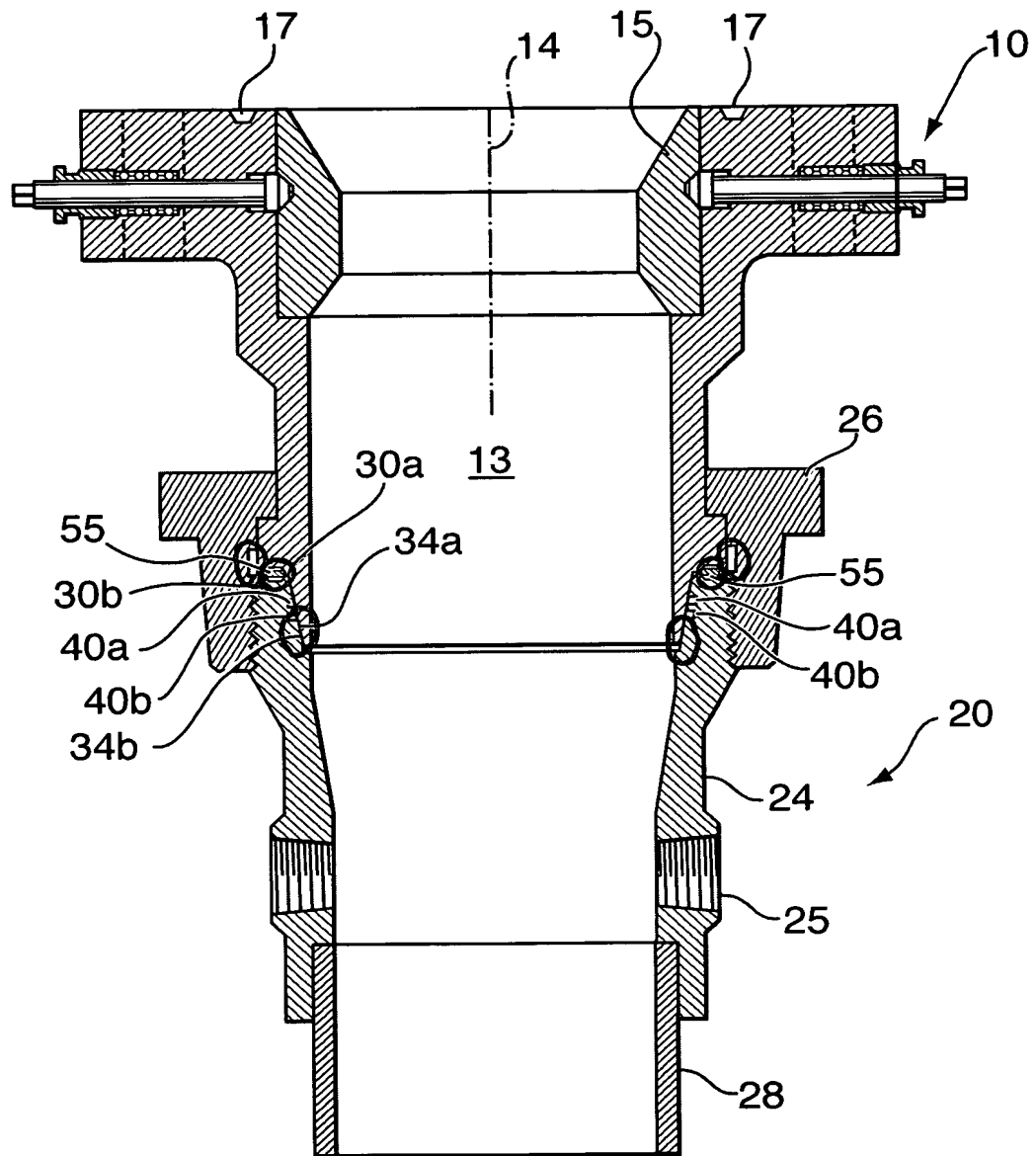


FIG. 2

3/7

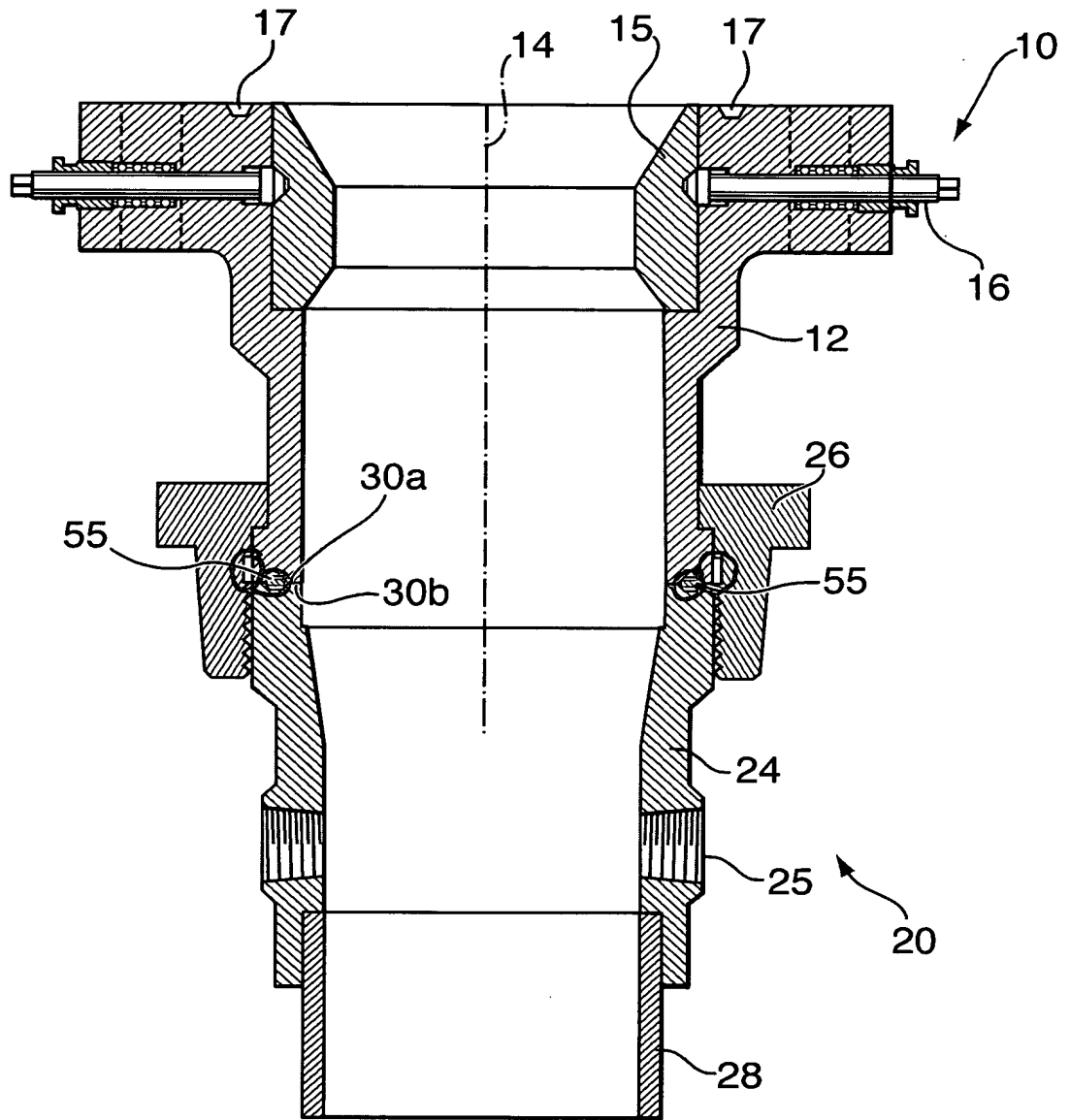


FIG. 3

4/7

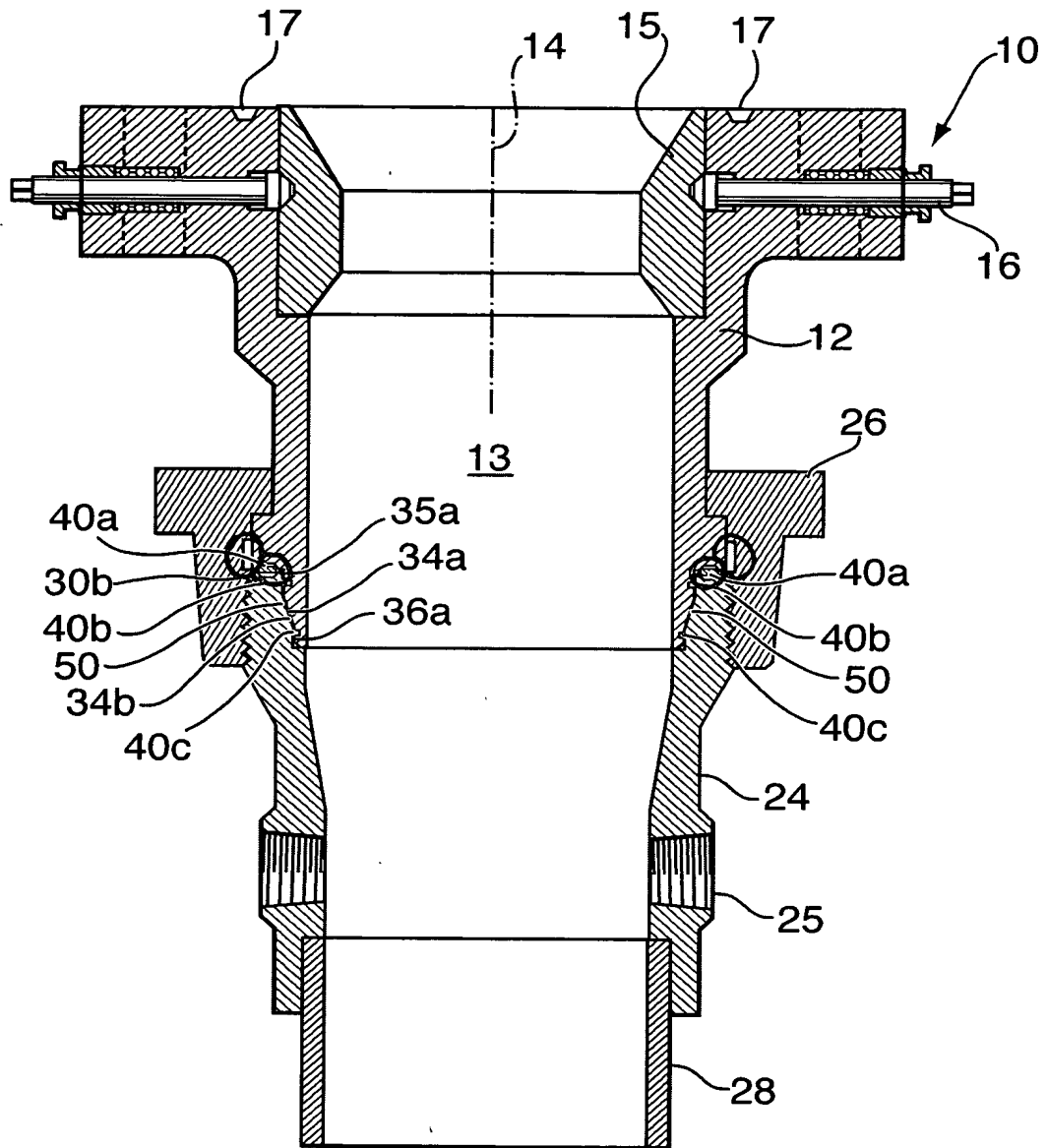


FIG. 4

5/7

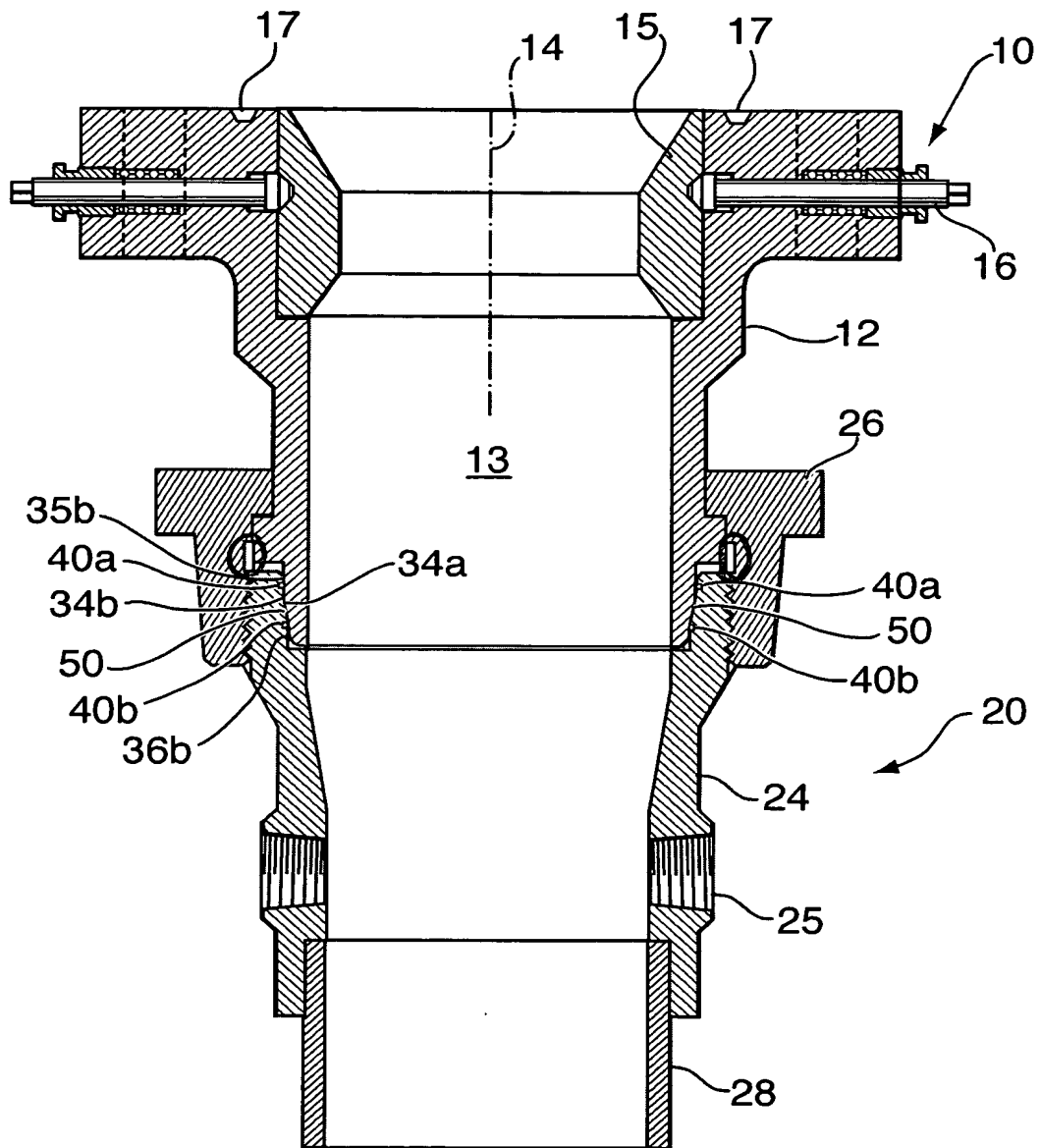


FIG. 5

6/7

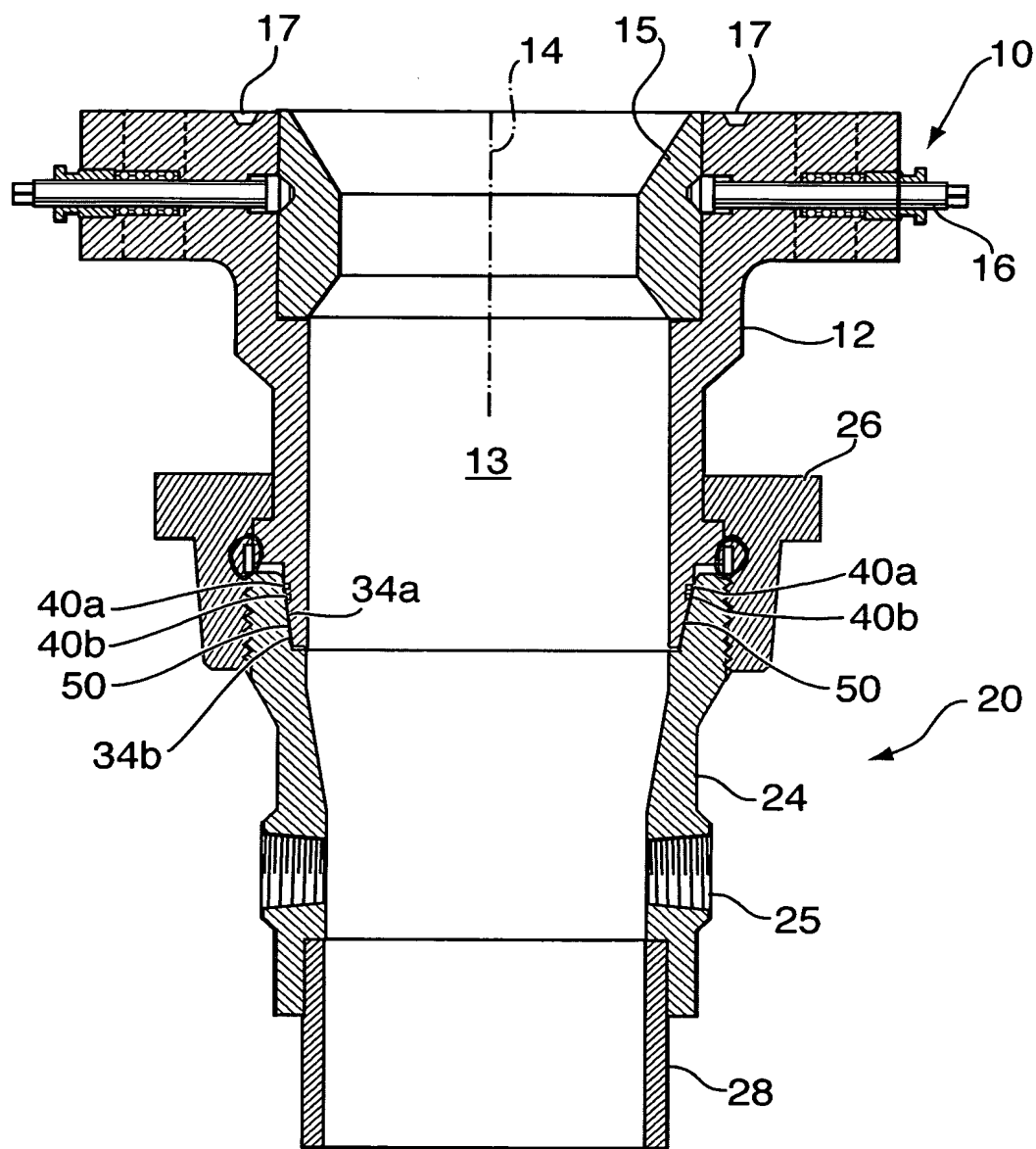


FIG. 6

7/7

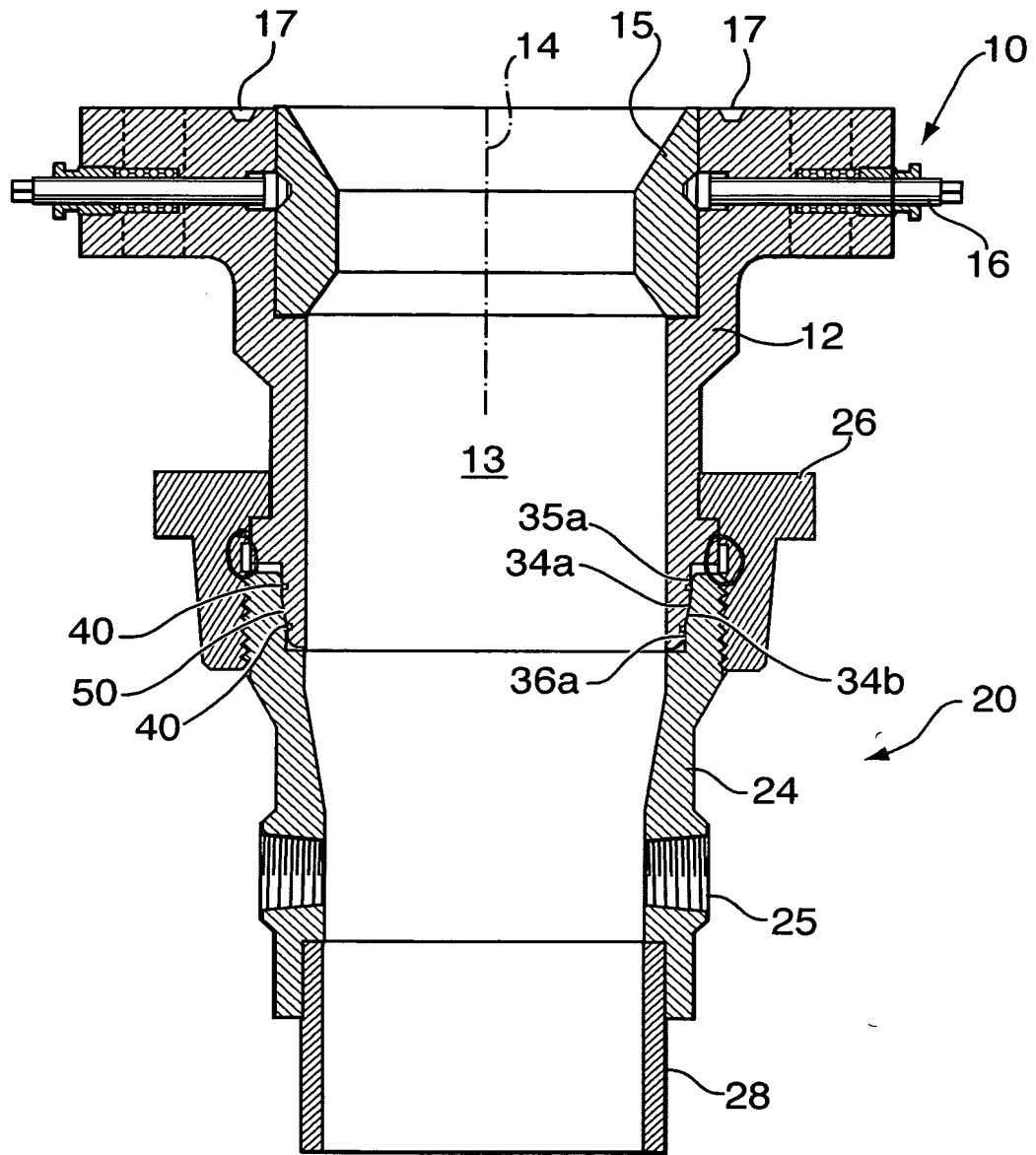


FIG. 7